

**ACCELERATOR TEST FACILITY
LOCK-OUT/TAGGING PROCEDURES**

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1. Introduction

Environmental Safety and Health Standard 1.5.1 specifies "Lock-Out/Tagging Requirements" as required by DOE 5483.1A and OSHA 29CFR 1910.147. The procedure described conforms to this guide but also relates to the way in which the procedures are implemented at the Accelerator Test Facility.

2. Discussion

Chapter 9, Lock-Out/Tagging of the "Guidelines for the Conduct of Operations of the Accelerator Test Facility" gives a general description of the ATF procedures. This procedure is designed to ensure that all machines or equipment are isolated from potentially hazardous energy, and locked-out and tagged before employees perform any servicing or maintenance activities where unexpected energizing, start-up or release of stored energy could occur.

3. Guidelines

3.1 Training

All personnel who have need to work on ATF machines or equipment are required to have training in the use of Lock-Out/Tagging procedures. This training will be documented and reviewed and approved by S&EP. Supervisors are responsible for the direct implementation of this procedure and to ensure that personnel in their area are trained in and comply with these procedures. When there is a change in job assignment, machines or equipment, processes that present a new hazard, or changes in this procedure, new training shall be given. Training shall include operation and maintenance of the equipment under energy control (see ES&H Standard 1.5.1, Part C).

3.2 Documentation

A log book recording all tags and locks used will be kept in the ATF Control Room. The log book shall be kept current at all times. The Operations's Supervisor will ensure that an adequate supply of locks and tags is available at all times and will assign a lock and key to each trained "authorized employee" as defined in BNL ES&H Standard 1.5.1, Part C3.

3.3 Types and Use of Tags

Two different colored tags are used at the ATF, namely red danger tags and yellow caution tags. The red danger tag shall be used at all times where there is potential for injury to personnel if the equipment or machines being locked and tagged are energized. The yellow caution tag is only to be used when protecting equipment which, if activated, could result only in equipment damage and would present no danger to personnel. Yellow caution tags may be used with or without lock-out.

4. Definitions

4.1 Energy Source

Any force that operates or flows through a system or piece of equipment; i.e. electricity, steam, water, hydraulic (pressurized liquid), pneumatic (pressurized gas or air), mechanical linkage, stored energy (springs), ionizing or nonionizing radiation, etc.

4.2 Log Book

A hard cover journal or notebook with numbered pages for maintaining an auditable record of the use of hold tags and locks.

4.3 Responsible Individual

Any Department/Division employee, visitor, contract laborer, or employee of contractor assigned to this Department/Division who will be performing work on equipment or systems, and responsible for implementing a lock-out/tagging in accordance with this procedure. These individuals shall be trained "authorized employees" as defined in ES&H Manual 1.5.1, Section III.

4.4 Lock-Out

Placement of a lock-out device on an energy isolating device in accordance with this procedure. The equipment being controlled cannot be operated until the lockout device is removed.

4.5 Tagging

Placement of a red danger hold tag or yellow caution tag on an energy isolating or equipment isolating device to give warning that such device is under the control of the person named on that tag.

4.6 Lock-Out Device

Device that utilizes a positive means, e.g. distinct lock with key to secure an energy device and prevent the energization of machinery or equipment.

4.7 Tagging Device

Prominent warning device, e.g., tag and means of attachment, which can be securely fastened (substantial enough to prevent inadvertent or accidental removal) to an energy isolating device in accordance with this procedure. This tag will have the following minimal information; name of person affixing the tag, date of tag, system affected, and hazard being protected from.

5. Procedures

5.1 De-energizing of Equipment

Prior to start of work which requires lock-out/tagging, supervisors (or other "responsible employee" as defined in ES&H Standard 1.5.1, Section III), will make certain that equipment or systems have been de-energized, and all electrical switches, breakers, valves (water, steam, air, etc.), and mechanical linkages have been disconnected and checked before permitting individuals to work on equipment or systems.

5.2 Locking and Tagging

The main energy sources controlling the equipment or system to be worked on shall be disconnected, tagged and locked. The red tag shall have the required information entered and the stub detached. The tag is attached to the controlling device (switch, valve, etc.) together with a locking device that will hold the control in a safe position.

5.3 Testing of Source

The energy source shall then be positively tested to ensure that all energy sources are isolated. After ensuring that no personnel are exposed, operate the push button or other normal operating control to make certain the equipment will not operate. Use of certain testing equipment (electrical

meters for example) must be by trained personnel.

5.4 Number of Tags and Locks

More than one tag and locking device shall be attached to the same energy source control when more than one individual is working on the same equipment or system.

5.5 Logging of Tags

Individuals will give the hold tag stub with the required information to their supervisor or the ATF Operations Supervisor or his designee. The supervisor, Operations Supervisor (or his designee), will file the stub and enter the pertinent information (date of tagging, equipment of system tagged, work being performed, hazard, individual who attached lock and tag, lock number or locking device identification) into the log book in the ATF Control Room.

5.6 Removal of Locking Devices and Tags

Upon completion of work the responsible individual will remove all tools and unnecessary equipment, re-install all guards, then remove his or her tag and locking device. The tag is given to the supervisor or "responsible employee" who is responsible for the log book who will record the date that the tag was removed, and file the stub with its tag. The tag and stub shall be retained until the Department/Division Safety Coordinator or his or her designee completes the next periodic audit.

5.7 Person Removing Locking Devices and Tags

A tag and/or locking device shall not be removed by anyone except the individual who attached it. The only exception to this is when the individual who attached the locking device and tag is not available (see 5.8).

5.8 Removal of Locking Devices and Tags When Initiator is Unavailable

Removal of the locking device and tag when initiator is not available (emergency situation, work completed on a different shift etc.) may only be accomplished as follows:

5.8.1 Three qualified "responsible employees" (see ES&H Standard 1.5.1, Section III) who have studied the circumstances and are satisfied that removal of the locking device and tag is safe shall be present.

5.8.2 Where possible concurrence shall be obtained from any persons who have been working on the de-energized equipment or systems and who are still in the area.

5.8.3 Each of the three persons authorizing removal of the locking device and tag shall sign the tag.

5.8.4 The information entered into the log book shall include, in addition to the date removed, a brief statement as to why it was necessary to remove the locking device and tag, and the names of the three persons authorizing removal.

5.8.5 The person initiating the red tag shall be informed of its removal as soon as possible and in any event before he or she returns to work on the tagged equipment or device.

5.9 Audit of Lock-Out/Tagging Log Book

An audit of the lock-out/tagging shall be conducted by the NSLS Department Safety Coordinator or his designee on a regular basis as determined by the usage. In any event, audits shall be conducted at least quarterly.